



The Development of Reflective Thinking in the First Six Years of Teaching

KÁLMÁN SÁNTHA¹

Abstract

The aim of this paper is to investigate the development of reflective thinking in the first six years of a beginner teacher's career. The qualitative study involved a beginner teacher of English in a primary school, who was selected on the basis of availability. Changes in reflective thinking by means of a structured reflective diary after three and six years were studied. In the reflective diary created at the end of the third and sixth years, the teacher had to answer the following questions: What am I doing well? Why? How do I know I have to do so? What do I have problems with? Why? Where do I make mistakes? What chances of development do I have? The processing of the diaries was done using content analysis, combining deductive and inductive logic. The basis of main codes and sub-codes was set up, also relying on triangulation. The reliability of coding was ensured by intra-coding. The results showed that after the third year, reflections appeared at a technical level, usually answering the question "what?". After the sixth year, the reflections were more complex, and often dealt with insights about teachers' activity. Besides "what?" questions "why?" and "how?" were in focus. The results have shown that during continuous reflection teachers may develop and improve a system combining theoretical and practical skills that can embrace the entirety of pedagogical work. The results show that continuous reflection contributes to the differentiation of pedagogical knowledge. The paper addresses those who are interested in the exploration, analysis, and development of reflective thinking.

Keywords

Beginner teacher, qualitative research, reflective thinking, structured reflective diary, teacher activity

¹ University of Pannonia, Faculty of Modern Philology and Social Sciences, Institute of Education, Veszprém, Hungary; santhak@almos.uni-pannon.hu



Introduction

People – laymen, beginners and experts – have different approaches towards the teaching profession. Some say that good teachers are born. Some say that certain elements of the teaching profession can be learnt, developed, and awareness can be raised. At forums focussing on teacher training and further training in Hungary questions are encountered about levels of professional performance, the content of competence-based teacher training, and the exploration of reflective thinking. The author argues that it is important to explore and analyse reflective thinking in teacher training, as well as in everyday pedagogical activities, because it can increase the efficiency of teaching and pedagogical work.

The paper emphasises that a teacher with a reflective approach will analyse the effects of teaching on himself/herself and on the students as well, and will constantly look for ways of improving his/her activities. On the basis of this the focus is on the comprehensive exploration of the reflective competence, also considering that among education science specialists there is no consensus as to how and to what extent the reflective competence of teacher trainees can be measured, or if it can be measured at all. Tynjälä's (1998) statement is also taken into account, which states that the written work of teachers and teacher trainees (e.g. reflective diary, lesson commentary, portfolio) help and necessitate the integration and reorganisation of information, and also involve analytical thinking. In my opinion that reflection can be learnt and practised (Etscheidt, Curran & Sawyer, 2012), and I discuss how the structured reflective diary can be a tool for analysing reflective thinking.

This paper presents the development of the reflective thinking of a teacher based on qualitative studies after three and six years in service. I was looking for an answer to the question to what extent reflective thinking is modified and gets more complex during the first six years of a teacher's career. Another question is how – on the basis of their ever-developing multiple reflections – teachers form a complex theoretical and practical system that enables them to embrace the entirety of teachers' work, and that has an effect on the efficiency of the teaching and learning processes.

Literature Review

In education science discourse, reflection is defined as a key competence of the professional teacher (Leonhard & Rihm, 2011). During the years of becoming a teacher, acquiring an approach that necessitates reflection during and after pedagogical activities (i.e. teaching) can be seen as a key competence for students who want to become teachers (Baumgartner & Welte, 2009). Reflective thinking has an effect on all areas of pedagogical work, as it helps the analysis and development of activities. The study of the reflective thinking of teachers began in the USA in the 1980s, the notion of "reflective teacher" was introduced in education sciences by Donald Schön. Schön (1987) studied how intellectuals from all walks of life think during their problem-solving activities (Schön, 1983), and he later also studied how students can be taught reflective practice (Schön, 1987). In his interpretation, reflection can be seen as a dialogue between the situation and the person reflecting (Schön, 1983).

Also, Falus and Kimmel (2003) argue that reflection is a systematic review of the effects of teaching activities on others (learners, parents, the process of teaching and learning) and the teacher. Sometimes teachers' professional dialogues contribute to the development of activities, the term 'collegial reflection' refers to this (Szivák, 2003). During collegial reflection,



the reflection usually focuses on past events, e.g. it can be a complex analysis of lessons held previously. The process can be seen as a discovery and analysis of the experience gathered during teaching (Sántha, 2013). Taking the concept of collegial reflection further, Häcker (2017) thinks reflection cannot be seen as an isolated task, but must appear in an institutionalised environment. This suggests that the process of becoming a teacher can be facilitated by an atmosphere and management open to reflection, where professionalisation can be helped by useful insights and supportive dialogue.

In our days, there is information at hand about the spiral structure of reflection (Jank & Meyer, 2002), the factors that limit reflection (Kimmel, 2006; Sántha, 2013), and there are models related to levels of professional performance. These prepare the analysis of activities, and visualise the differentiation of reflective thinking as a function of time spent in service (Diaconu, 2002). Among the models, the STORIES-model is worth a mention (Students Training of Reflection in Educational Settings) (Levin & Meyer-Siever, 2018), which sees the discovery and development of reflective thinking in a four-phase model. This presents the topic of reflective thinking in its complexity, including recall of the theoretical and/or empirical background of the reflected situation, the perception of different perspectives (how participants experience the situation), using alternatives (what other ways of behaviour can be found on the basis of previous phases), as well as individual professional development (e.g. differentiating between strengths and areas to be developed).

During the exploration of reflective thinking qualitative methods that establish and “visualise” the links between the teacher’s theoretical and practical skills, and help reflection can be applied. With their help, the logic of the thinking and activity behind the processes represented in the textual information can also be discovered. The qualitative techniques that can be used to discover reflective thinking include different collections of documents and portfolios (Levin & Meyer-Siever, 2018), the video analyses of Stimulated Recall and the commentaries that help the analysis (Lutovac, Kaasila & Juuso, 2015; Messmer, 2015; Sántha, 2013), as well as the display of unstandardised network cards together with commentaries (Sántha, 2017).

Additionally, Levin and Meyer-Siever (2018) argue that the interview situations of stimulated recall can make the study of reflective thinking more exact. When looking at the methods of discovering reflective thinking in a critical way, Maclellan (2008) called attention to the fact that the verbal discovery of reflective thinking will not automatically lead to the improvement of reflective performance. Frankhauser (2016) thinks video recordings (and their analysis) could be the key to developing the process, because the recordings can serve as models, can show didactic examples necessary for efficient teaching, and best practices that can be integrated into the teacher’s activities. Further, the reflections on what is seen can be linked with the goals and perceptions during the lessons, so they can generate a complex development process. Wyss (2013), with an eye on complex discovery techniques and triangulation, used several tools (e.g. reflection questionnaires, Stimulated Recall videos) to analyse the reflective competence of teachers.

Reflective teachers broaden their scope of activity with a constant interplay of activity and reflection. Reflecting continuously on their activities, teachers make an attempt to constantly develop their teaching practice. This way, their professional skills develop and become systematic through practical experience. Reflection requires the explication and, consequently, growing awareness of unconscious, subjective theories. During the years of becoming a teacher, acquiring an approach that necessitates reflection during and after



pedagogical activities (i.e. teaching) can be seen as a key competence for students who want to become teachers (Baumgartner & Welte, 2009).

Methodology

I used a qualitative approach (phenomenological research) to study the development of reflective thinking. I decided to use a qualitative study because this explores the individual parameters concerning reflective thinking in a deep and context-dependent manner. Based on this, a personal development plan can be created for the person in the study, which can contribute to the development of teaching activities. The research was designed based on open questions and problems instead of a hypothesis. I was looking for an answer to the question to what extent reflective thinking is modified and gets more complex during the first six years of a teacher's career. Statements about the development of reflective thinking were developed step by step on the basis of systematic data analysis.

Participants

During the design process, I planned to involve three beginner teachers in the study so that a better understanding of the development of their reflective thinking. Thus patterns in the reflective thinking of beginner teachers can possibly be discovered then might be used later in more complex analyses (e.g. mixed methods). However, after detailing the objective, time span, and qualitative methodological aspects of the study, only one teacher agreed to participate. Those who rejected taking part did so because of lack of time and the long time span of the study. In the end, one teacher, teaching English in a primary school of a county city in Hungary, agreed to participate. This teacher was open enough to carry on the research even after 6 years, saying this is a good way to follow-up one's activity, its changes, and this is how one can learn from the whole process. Because of the problems mentioned above, I selected the sample on the basis of availability.

Ethical parameters

During the research process, I strived to establish a good working relationship based on dialogue. The research was based on constructive ethics; this is the model that facilitates opening up inner ideas, so helping the implementation of successful qualitative studies. The teacher taking part in the study was familiarised with the objectives, the time schedule, the methodological approach, and I also made it quite clear that anonymity for all participants is guaranteed.

Instrument and procedures

During the study process – three years and six years after starting the teacher's career – I made a structured reflective diary with the teacher. The teacher was asked to create the diaries at home, or in an environment void of any kind of disturbance. This was a way of opening up and accessing a large spectrum of data. Creating a reflective diary is a time-consuming process, but this technique is absolutely suitable to discover context-dependent elements. The diary was structured because the teacher had to answer the following questions:



1. What am I doing well? Why? How do I know I have to do so?
2. What do I have problems with? Why? Where do I make mistakes?
3. What chances of development do I have?

There was no length constraints imposed on the reflective diaries, so teachers were free to word their reflections. An advantage of this technique is that notions, events in the classroom, and situations can be textually represented, described, and analysed in the diaries, so diaries help the discovery of reflective thinking. With reflective diaries, I had a 30-page text corpus for analysis.

Data analysis

The textual evidence of the reflective diaries was analysed with qualitative content analysis. The processing of the diaries was done with a combination of deductive and inductive logic. The deductive coding logic enables a coding according to a list (a priori), so the code list included the most important content nodes: “what am I doing well”, “how do I know I have to do so”, “what do I have problems with”, “where do I make mistakes”, “what chances of development do I have”. Following this, I assigned the text segments available to the codes from the code list.

This was followed by the further categorisation of the text segments according to an inductive coding logic. During coding it is worth ensuring the unambiguity of the codes, as ambiguities and overlaps hinder data processing. The codes can be matched with quotations that help thematic organisation and search in the database. The reliability of coding was ensured by intra-coding (Dafinoiu & Lungu, 2003). This means that the same coder carries out two separate coding sessions, i.e. recodes the text, and then compares the first result with the second one. This is usually done a few days after the first so that experiences from the first coding do not interfere with the second coding. In the case of both text corpora, recoding was carried out one week after the first, and the results were completely identical.

The role of triangulation in the research

It is necessary to review triangulation typologies according to Denzin’s interpretation (Denzin, 1989; Flick, 2014), which makes a distinction between the triangulation of theoretical, methodological, and investigator data, to get a better picture of the research process. To fulfil the requirements of theoretical triangulation, I used a theoretical approach using several different criteria. Methodological triangulation was not used, as one single method was used to research the issue.

The fact that our choice falls upon a reflective diary is justified because this technique is suitable to explore beliefs, to understand participants’ thoughts, and helps overcome temporal, material and technological barriers of the study. To implement personal triangulation, when analysing the diaries, I returned to the teacher after the third and sixth years, and asked the teacher about partial results. The teacher also told us about the necessity of getting feedback. The temporal, spatial, and personal distinctions required to the triangulation of the data was not supported by the one-participant study, it was only the data collection in every three years that was carried out. This did not mean a limitation to the information available, the diaries testified the development of reflective thinking in detail.



Findings

The results of the reflective diaries are presented in a main code – sub-code system in Table 1. Main code 1, meaning a positive approach to activity, was complemented with 6 sub-codes after 3 years, and 6 sub-codes after 6 years. The negative features of activity were complemented with 6 sub-codes after 3 years, and 5 sub-codes after 6 years. When reflecting on chances of development, 2 sub-codes appeared after 3 years, and 3 sub-codes after 6 years.

Table 1. *Main codes and sub-codes*

Main codes	Year 3 Sub-codes	Year 6 Sub-codes
1. What am I doing well? How do I know I have to do so?	Methodology, administration, assessment, collegial reflection, children, parents	Methodology, teaching profession – good teacher, disciplining, collegial reflection, comparison
2. What do I have problems with? Where do I make mistakes?	Methodology, disciplining, control – assessment, collegial reflection, criticism of teacher training, problem of children and parents	Reflection, further training – self-training, methodology, resources, control and assessment
3. What chances of development do I have?	Time, classroom observation (collegial reflection)	Own personality, easing stress, review of teacher–parent relationships

The findings of the reflective diary after 3 years

On the basis of the results of the diary made after 3 years, reflections on methodology, assessment, collegial reflection, as well as the children and their parents appeared both in problem areas and areas seen as problem-free by the teacher. The question is what system of beliefs and activities induced the appearance of the reflections. In the diary after the third year, the number of problem areas is slightly higher than the number of successful areas. The activity of the teacher was influenced by the classic problems of starting a career; initial problems came from administration, time-management, objectives, and planning. The problem of isolated and global planning surfaced here, the teacher wants to see all activities as an organic process, but the lack of experience makes this impossible:

“One has to know the goal of the lesson. Sometimes I feel I do not arrive to think globally. I prepare from lesson to lesson, but I’m never quite sure I achieved what I wanted.”



Besides sticking to the original lesson plan (“I cannot plan lessons so that they last for 45 minutes. Once I finished 10 minutes before the end of the lesson (...) I made some desperate efforts to fill the rest of the lesson”. “I don’t change my lesson plan because I don’t know how to do it.”) deviations also occurred, as well as the necessity of change, which means flexibility, an adaptation to changing learning and teaching situations. The initial insistence on schemata was replaced by context-dependence, the teacher tried to harmonise the theory learnt at school with real-life pedagogical situations:

“I think it is a form of success when I have a good idea during the lesson and I can modify my plans a little.”

Sticking to classical methods and ways of working hinders interactivity, still the teacher used such a methodological approach to be “as safe as possible”. The teacher decided to use interactive and new generation methods most appropriate to students’ age and the pedagogical situation less frequently:

“Group work or pair work is not often used. I make efforts to give them such tasks, but frontal teaching offers security for me, thus I can see and hear what they’re producing (...)”.

To create a methodological culture and successful teaching activity, a neat board appearance is indispensable:

“I’m not satisfied with my board appearance (...) sometimes I forget that students can’t always read my writing.”

Administrative burdens also surfaced at the evaluation stage, although the focus of reflections fell on finding the correspondence between the grades and students’ actual performance:

“I find it very hard to keep an exact record of grades and also to tell children what mark is given for which achievement.”

Children were given a central place in the teaching and learning process. The teacher thought that an equal partnership may eventually lead to efficient work, but this is very hard to achieve:

“Children like my lessons (...) I know this because they usually raise their hands, and come up to me to talk after lessons. The young ones like to hold my hand when we are going somewhere. This really feels good.” “I like playing with and talking to them, I find them interesting, and they like the fact that a teacher takes part in things they find important.”

The harmonious relationship with the students helped the teacher through problems of disciplining:

“Sometimes I had problems with disciplining (...) I do know what is right and wrong, but transmitting the message is not easy for me.”



When dealing with the teacher's activity, the invaluable role of experienced colleagues, known as collegial reflection cannot be ignored, which can contribute to the development of reflective thinking to a great extent?

"I have a (female) colleague (...) I tell her my ideas. She thinks I'm creative and she also praises my enthusiasm. This encourages me to work the way I do, or to try to do even better."

"I did class observation at a (female) colleague's class, and that lesson made me realise that texts and tasks can be approached from other angles."

In everyday school work, parents also have a significant role besides the teacher–student–material triangle. The reflections of the teacher focussed on the relationship with parents, with a special attention to its quality and the problems of pronouncing an opinion:

"Despite my age and lack of experience I get on well with parents, but probably I'm too tactful when speaking about problems."

The teacher also spoke about the necessity to participate in further training and broaden experiences, as all these contribute to making the teacher's activity more efficient:

"I don't have the slightest idea how to start looking around."

The findings of the reflective diary after 6 years

After 6 years of teaching, the reflective diary reflects the changes in the reflective thinking of the teacher. In some content nodes, there are significant changes compared to the diary three years earlier. The teacher was aware of this, and also reflected on this fact in the diary:

"If I think about how I taught 3 or 4 years ago, and how I teach now, it's chalk and cheese. I've also changed a lot as a person. My beliefs about life and human values have changed, and I see differently the meaning of life, too."

The methodological approach of the teacher became more complex and flexible after the sixth year, understanding the structure and process of the classes became much more important:

"I've learnt how to be flexible as really anything can happen during a lesson (...) I always have an extra game up my sleeve with which I can enchant pupils."

"I always make a lesson plan, I must put down the structure of the lesson, because it makes my work easier."

However complex the reflections might be, differentiation still remains a problem area:

"Differentiation for me is an insurmountable problem (...) I simply cannot believe that a good (i.e. communicative, diverse, playful, activity-centred) class can be held in a way that all the 20 members of the group do their tasks adequately. Still, groupwork and pairwork are present during the lessons."



The diary after the sixth year also included reflections about resources. This is a problematic area as creating extra material has an effect on the teacher's workload:

"As I work with a lot of extra material (which is always connected to the subject matter), I always have a lag compared to the coursebook – this disturbs me because parents and children only see that my pupils have done fewer units from the book than other classes, but I believe the knowledge of my pupils is deeper."

Workload can also be found when the teacher speaks about assessment:

"I don't evaluate the performance of the children after every lesson. Although I made a lot of progress, sometimes I forget about red marks in the junior section. I think that's because I'm on the run, and once the lesson is over, I concentrate on the next already."

Reflections about disciplining and the relationship with pupils converge, they describe the same things and are reflective of the teacher's attitude:

"I think immediacy is important, I always explain to my pupils what mistakes they make and how to avoid it next time."

"I don't know exactly when I began to know, or rather feel, the slight differences between the different types of punishments."

Collegial reflection was also present in the activities of the teacher. This is by all means positive as the development of a reflective working culture necessitates colleagues who understand and accept reflections. All this can be a key to efficiency:

"I like to ask for help from my older colleagues and I also have the courage to do so."

After 6 years spent teaching, the teacher reflected usefully on the entirety of the teaching profession, also collecting the characteristic features of good teacher:

"A good teacher must not only be good at his/her profession, but must also have a road horizon to be able to form relevant opinions in certain topics and to be successful."

"Consistency is a very important requirement in education and teaching."

To develop professional competence, further training and self-training are indispensable:

"I think efficient further trainings are very important, teachers do not always have enough time to educate themselves."

"I should read more books about pedagogy and psychology, although I only have little time to do so, I would be very happy to take part in such training courses."



The findings of chances of development

Even at the beginning of the teaching career, the teacher had a negative opinion about staff and staff members hindering the formulation of a reflective working culture and developing reflective thinking. Inadequate professional and material contexts and the everyday challenges of the teaching profession put serious limitations on reflection. A partial exception from these limitations (e.g. the positive attitude of some colleagues) does not enable someone to develop a reflective working culture. This also means that to be able to reflect, one has to do away with every obstacle. This can be helped by self-education and further training.

“I find it a good thing but it also frustrates me when a senior colleague comes to observe my lessons. They could probably give me feedback about things I don’t recognise myself. They could also give me useful information and help, but I still don’t believe the teaching staffs are suitable places for this kind of exchange.”

Discussion

The results show that structured reflective diaries visualise professional development, show to what extent the teacher can systematically reflect on and make conclusions about the teaching activity and the learning and teaching process, and how the teacher can make these results relevant for his/her own teaching. A condition of this is the mixing of theoretical and practical knowledge, so the individual development line of the teacher’s knowledge can be drawn. This also suggests that the reflective diary is capable of drawing highly individual and different development lines.

From these reflections the distinction between ‘after action’ and ‘during action’ reflections can clearly be seen (Schön, 1987), but these did not separate so markedly in the diary after 3 years. The teacher was trying to make his/her activities more efficient, and all this shows marks of consciousness. In the teacher’s thoughts we can also find a need for collegial reflection, this corresponds to what has been suggested by Häcker (2017).

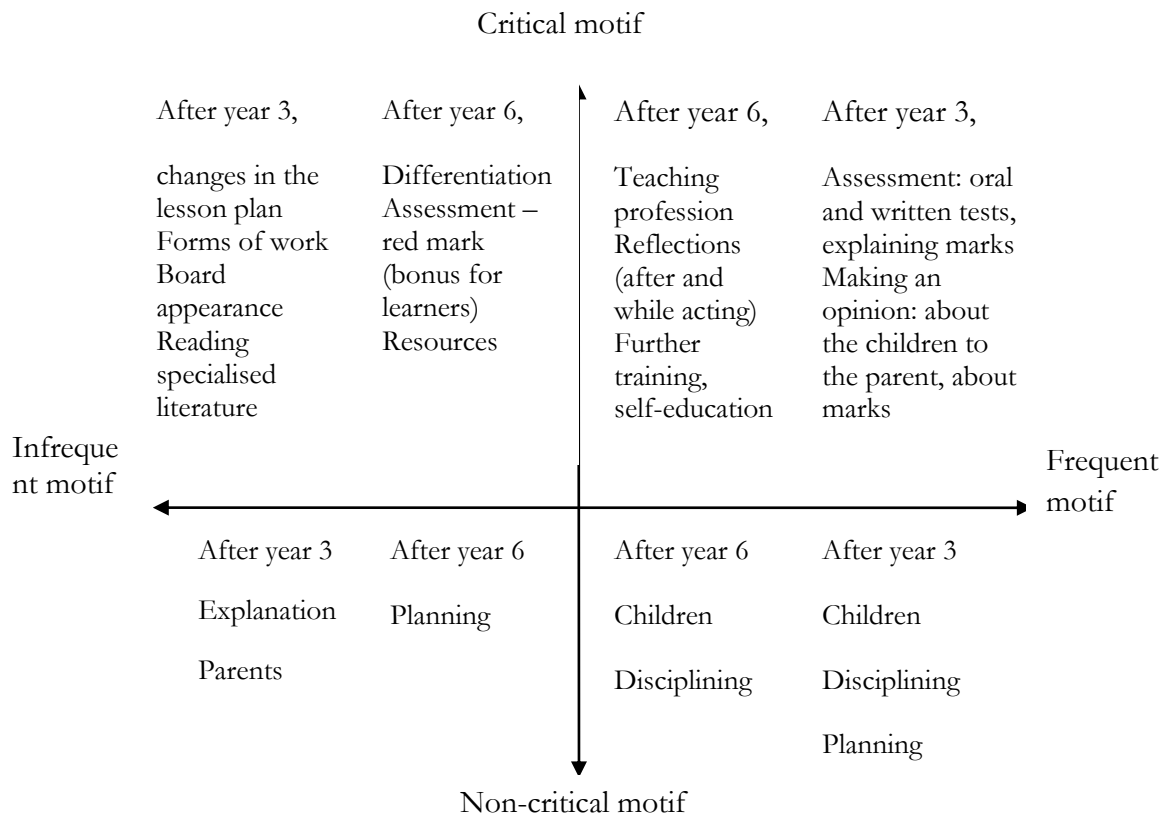
The results supported the claim of Levin & Meyer-Siever (2018), which says the discovery of reflective thinking is hindered by the fact that setting up codes and categories does not lead to an unambiguous distinction between the main content nodes of reflective thinking. The results show that in the case of teachers’ activities, a network-like interlocking of the content nodes is visible (e.g. giving marks can function as motivation, assessment, as well as disciplining action in the classroom).

The network-like structure of the content nodes also carries in itself the criticism of the hierarchical nature of reflective thinking. This can be seen in the diaries after years 3 and 6 as well, as some elements in the development of teachers’ activities appear in extremely complex structures (see also collegial reflection or the need for self-training and further training), sending the hierarchical structure in the background and shifting the focus on a multidimensional approach.

In the following section, I am going to study the development of a reflective attitude on the basis of frequent and infrequent, as well as critical and non-critical motifs (Figure 1). Our aim is to create a clear picture that makes teachers think, and that also helps them describe their own critical and non-critical motifs, also giving them a chance to reflect upon these.



Figure 1. *Motifs of reflection after years 3 and 6*



When discussing infrequent critical and non-critical motifs, no significant difference between 3 and 6 years spent in education can be found. The focus of critical motifs was the changes in the teacher's methodological battery. I have to note here that although after 3 years the lesson plan and changes were seen as critical points, after 6 years this was put into the non-critical category. Experience-based security, and flexible lesson planning and implementation now appeared at a non-critical level.

When discussing the development of reflective thinking, significant changes in frequent critical motifs can be seen, where complex reflections after the 6th year can be found. The focus of these were 'after action' and 'during action' reflections. The teacher also named the different areas of these reflections, so awareness of the complexity of teaching activities can be detected. Further training and self-education appeared as ways of improving teaching efficiency, and reflections about the entirety of the teaching profession became visible. After 3 years, the teacher did not produce reflections of such complexity and depth.

Most similarities between the 3rd and the 6th year can be seen in the case of frequent and non-critical motifs. In both cases, the most important content elements are disciplining and children, but the complexity and nature of the reflections was modified. After the 6th year, reflections were primarily focussing on the cause-and-effect relationships of the teaching activity.



Conclusions

The results have shown that during continuous reflection – and through the growing complexity of these reflections – teachers may develop and improve a system combining theoretical and practical skills that can embrace the entirety of pedagogical work, thus contributing to the improvement of efficiency. Developing a system needs conscious and hard work, results show that most reflections after year 3 got no further than the most basic technical level: most of them described what the teacher did without discussing the reasons why. At that stage, only few answers to the question “how can one know what is right?” could be found. After the sixth year, the reflections were more complex, and often dealt with understanding the pedagogical activity. Signs of uncertainty can be detected, but the reflections have already become more complex. We can see from the diary that continuous reflection contributes to the differentiation of pedagogical knowledge. To reach this stage, it is important to develop a reflective working culture and to find colleagues who are willing to give professional help.

Careful consideration of the right research method to study the mental structures of teachers is essential, as the way teachers recall their own activities during the reflection process is highly dependent on the research method used. When doing further research to discover reflective thinking, the use of methodological triangulation as a relevant method should be taken into account. In the present case, I did not use methodological triangulation, and only used a reflective diary, which is capable of discovering the reflections and is not constrained by material or technical conditions. The use of several methods in the name of triangulation can make the discovery of reflective thinking more detailed and nuanced, and the complementary nature of the results enable a more multi-faceted analysis.

The results are relevant both for teacher training and working teachers as they show a possible way of discovering and developing reflective thinking, and, in addition, based on these results, it is possible to create development plans for beginners to help the process of becoming a teacher. For those who have already been teaching for several years, they offer a chance for continuous dialogue and development.

References

- Baumgartner, P., & Welte, H. (2009). Lernen lehren, lehren lernen. In J. Meixner & K. Müller (Hrsg.), *Konstruktivistische schulpraxis: Beispiele für den unterricht* (pp. 275–278). Weinheim und Basel: Beltz Verlag.
- Dafinoiu, I., & Lungu, O. (2003). *Research methods in the social sciences*. Frankfurt am Main: PeterLang.
- Denzin, N. K. (1989). *The Research Act. A theoretical introduction to sociological methods*. New York: McGraw-Hill.
- Diaconu, M. (2002). The professional teaching competences. In Gliga, L. (Eds.), *Professional Teaching Standards* (pp. 26–35). Bucharest: Ministry of Education and Research.
- Etscheidt, S., Curran, C. M., & Sawyer, C. M. (2012). Promoting reflection in teacher preparation programs: A multilevel model. *Teacher Education and Special Education*, 35(1), 7–26.
- Falus, I., & Kimmel, M. (2003). *A portfólió (the portfolio)*. Budapest: Books in Print.
- Flick, U. (2014). *An introduction to qualitative research*. London: Sage.



- Frankhauser, R. (2016). To observe and to be observed: how teachers perceive videography and experience its camera gaze in continuing education. *Forum Qualitative Sozialforschung / Forum Qualitative Social Research*, 17(3). Retrieved from <http://nbn-resolving.de/urn:nbn:de:0114-fqs160392>.
- Häcker, T. (2017). Grundlagen und implikationen der forderung nach förderung von reflexivität in der lehrerinnen- und lehrerbildung. In C. Berndt, T. Häcker & T. Leonhard (Hrsg.), *Reflexive lehrerbildung revisited. traditionen – zugänge – perspektiven* (pp. 21–45). Bad Heilbrunn: Julius Klinkhardt.
- Jank, W., & Meyer, H. (2002). *Didaktische modelle*. Berlin: Cornelsen Scriptor.
- Kimmel, M. (2006). A tanári reflexió korlátai (the limitations of teacherly reflection). *Pedagógusképzés*, 6(3–4), 35–49.
- Leonhard, T. & Rihm, T. (2011). Erhöhung der reflexionskompetenz durch begleitveranstaltungen zum schulpraktikum? – konzeption und ergebnisse eines pilotprojekts mit lehramtsstudierenden. *LehrerInnenbildung auf dem Prüfstand*, 4(2), 240–270.
- Levin, A., & Meyer-Siever, K. (2018). Entwicklung der reflexionskompetenz im rahmen eines fächerübergreifenden e-portfolios. In T. Hoffmeister (Hrsg.), *Resonanz: magazin für lehre und studium an der Universität Bremen* (pp. 24–31). Bremen: Universität Bremen.
- Lutovac, S., Kaasila, R., & Juuso, H. (2015). Video-stimulated recall as a facilitator of a pre-service teacher's reflection on teaching and post-teaching supervision discussion – a case study from Finland. *Journal of Education and Learning*, 4(3), 14–24.
- Maclellan, E. (2008). Pedagogical literacy: What it means and what it allows. *Teaching and Teacher Education*, 24, 1986–1992.
- Messmer, R. (2015). Stimulated recall as a focussed approach to action and thought processes of teachers. *Forum Qualitative Sozialforschung / Forum Qualitative Social Research*, 16(1). Retrieved from <http://nbn-resolving.de/urn:nbn:de:0114-fqs150130>.
- Sántha, K. (2013). Stimulated recall in exploring the constraints of reflective thinking. *Problems of Psychology in the 21st Century*, 6(3), 47–54.
- Sántha, K. (2017). Network cards as a way of discovering the reflective thinking of teacher trainees: the relevancies of a qualitative analysis. *PedActa*, 7(1), 13–18.
- Schön, D. (1983). *The Reflective practitioner. How Professionals Think in Action*. London: Temple Smith.
- Schön, D. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.
- Szivák, J. (2003). *A reflektív gondolkodás fejlesztése (Developing Reflective Thinking)*. Budapest.
- Tynjälä, P. (1998). Writing as a tool for constructive learning: Students' learning experiences during an experiment. *Higher Education*, 36(2), 209–230.
- Wyss, C. (2013). *Unterricht und Reflexion. Eine mehrperspektivische Untersuchung der Unterrichts- und Reflexionskompetenz von Lehrkräften*. Münster, New York: Waxmann.

Biographical note

KÁLMÁN SÁNTA, associate professor, University of Pannonia, Faculty of Modern Philology and Social Sciences, Institute of Education. His research area is qualitative research methodology, abduction in the qualitative research and analysis of teacher's activities and thinking.